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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,593	09/19/2005	Katsuhiro Fujimoto	1830.1012	1090
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1201 NEW YORK AVENUE, N.W.				
WASHINGTON, DC 20005				
EXAMINER				
LEE, DORIS L				
ART UNIT		PAPER NUMBER		
1764				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/549,593

**Applicant(s)**

FUJIMOTO ET AL.

**Examiner**

DORIS L. LEE

**Art Unit**

1764

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 6-8, 14, 15, 17-22, 25 and 29-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-8, 14, 15, 17-22, 25 and 29-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 18, 2011 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-3, 6, 14-15, 17, and 29-31** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kelsey (US 6,093,786)** in view of **Broussard et al (US 6,605,658)**.

**Regarding claim 1 and 29-31**, Kelsey teaches a polytrimethylene terephthalate composition (Abstract) comprising a polymer component (col. 2, lines 39-53) and a hindered phenolic antioxidant (col. 3) which fulfills the structural requirements of components A. The polytrimethylene terephthalates has more than 50 mol percent is composed of trimethylene terephthalate repeating units (col. 2, lines 39-53). Kelsey teaches that at least 50 mole percent of the diacid to make the polyester is terephthalic

acid (col. 2, lines 44-45) and that the other diols can be ethylene glycol or 1,4 butanediol (col. 2, lines 45-47). Therefore, 0-50% of the polymer component can be polyethylene terephthalate or polybutylene terephthalate.

However, Kelsey fails to teach the addition of a secondary amine which fulfills the structure of Component B.

Broussard teaches a stabilizer mixture for organic polymers (Abstract) which includes a hindered phenol (Abstract) which satisfied the structural requirements of component A such as Irganox 259 (col. 12, lines 15-2) and also includes stabilizing mixture includes hindered amines (Abstract) such as Chimassorb 119 (col. 36, lines 65-67) which (according to the applicant's own specification) is N,N',N'',N'''-tetrakis-(4,6-bis-(butyl(N-methyl-2,2,6,6-tetramethylpiperidin-4-yl)amino)-triazin-2yl)-4,7-diazadecane-1,10-diamine and reads on Component B of the instant application.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the combination of a hindered amine and a hindered phenol as taught by Broussard in the composition of Kelsey. One would have been motivated to do so in order to receive the expected benefit of providing improved stabilization to the degradation by oxygen and/or light (col. 1, lines 55-60). They are combinable because they are concerned with the same field of endeavor, namely resins with stabilizers.

**Regarding claim 2**, modified Kelsey teaches that the amount of the hindered amine in the composition (component B) is ranges from the amount from 0.01 to 10 % by weight with respect to the weight of the organic polymer to be stabilized (Broussard, col 42, lines 45-50) and given this loading, that total amount of the secondary amine

structure is present in the amount from 0.0001 to 1.0 milliequivalent per mole of trimethylene terephthalates repeating units.

**Regarding claim 3**, modified Kelsey teaches that both the phenolic and the amine compounds are stabilizers (col. 42, lines 35-40).

**Regarding claim 6**, it is noted that component C is not mandatorily present in the composition.

**Regarding claim 14**, Kelsey teaches that the polytrimethylene terephthalates composition of claim 1 can be made into a fiber or molded article (col. 5, lines 20-23).

**Regarding claim 15**, modified Kelsey teaches that both the phenolic and the amine compounds are stabilizers (col. 42, lines 35-40).

**Regarding claim 17**, it is noted that component C is not mandatorily present in the composition.

4. **Claims 7-8, 18-22 and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kelsey (US 6,093,786)** in view of **Broussard et al (US 6,605,658)** and **Kikuchi et al (US 4,897,438)**.

The discussion regarding Kelsey and Broussard in paragraph 3 above is incorporated here by reference.

**Regarding claims 7-8 and 18-19**, modified Kelsey fails to teach the addition of a compound with a thioether group.

Kikuchi teaches a polyester resin composition (col. 6, lines 64-68) compound is assed in an amount from 0.01 to 5 parts by weight per 100 part by weight of the synthetic resin (col. 7, lines 5-21) and given this loading, the sulfur atom is present in

the amount from 0.0001 to 1.0 milliequivalent per mole of trimethylene terephthalates repeating units.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to add the thioether compound as taught by Kikuchi to the composition as taught by modified Kelsey. One would have been motivated to do so in order to improve the oxidation stability remarkably (Kikuchi, col. 7, lines 5-10). They are combinable because they are concerned with the same field of endeavor, namely stabilized polyesters.

**Regarding claims 20-22**, Kelsey teaches that the polymer component has more than 50 mol percent is composed of trimethylene terephthalate repeating units (col. 2, lines 39-53). Kelsey teaches that at least 50 mole percent of the diacid to make the polyester is terephthalic acid (col. 2, lines 44-45) and that the other diols can be ethylene glycol or 1,4 butanediol (col. 2, lines 45-47). Therefore, 0-50% of the polymer component can be polyethylene terephthalate or polybutylene terephthalate.

**Regarding claim 25**, Kelsey teaches that the polytrimethylene terephthalate composition of claim 22 can be made into a fiber or molded article (col. 6, lines 20-23).

### ***Response to Arguments***

5. Applicant's arguments with have been considered but are moot in view of the new ground(s) of rejection, however as the Kelsey and the Kikuchi references have been carried over from the previous office action, any pertinent arguments pertaining to these references will be addressed below.

6. **Applicant's argument:** Perhaps the Examiner is arguing that that it would have been obvious to substitute the Irganox 5057 for the organophosphate of Kelsey.
7. **Examiner's response:** The examiner is not proposing that the organophosphate of Kelsey is removed or replaced by Kelsey. Rather, the examiner has used a secondary reference to teach that a combination of a hindered amine and a hindered phenol performs better than a single type of stabilizer as taught by Broussard (col. 1). It is noted that the Ciba reference is no longer used to teach the Irganox 5057 which has been necessitated by the claim amendments.

#### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DORIS L. LEE whose telephone number is (571)270-3872. The examiner can normally be reached on Monday - Thursday 7:30 am to 5 pm and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Doris L Lee/  
Examiner, Art Unit 1764